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Investigation of Sexual Function and Dyspareunia in Third Trimester Pregnant Women

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ABSTRACT

Purpose: The aim of this study was to investigate sexual function and dyspareunia in third-trimester pregnant women living in Türkiye.

Method: Forty pregnant women in third trimester (age: 30.70 years, body mass index: 27.39 kg/m²) participated in this study. The Female Sexual Function Index (FSFI) and the Visual Analog Scale (VAS), both validated and reliable in Turkish, were used to assess sexual function and dyspareunia. The collected data were analyzed using descriptive statistics, normality tests, and Spearman correlation tests. Statistical significance was considered at $p<0.005$.

Results: Based on the FSFI total scores, sexual dysfunction was identified in 37 out of 40 pregnant women (92.50%), and dyspareunia was reported by 15 women (37.50%). A statistically significant weak negative correlation was found between the VAS dyspareunia total scores and FSFI total and subscale (excluding pain) scores (r: -0.241, $p<0.005$). In addition, a weak positive correlation was found between the FSFI pain score and the VAS dyspareunia score (r: 0.241, $p<0.005$).

Discussion: Sexual function is negatively affected in the third trimester of pregnancy. Addressing sexual function during pregnancy is important to improve quality of life.

Key Words: Pregnancy, Sexual Function, Dyspareunia.

INTRODUCTION

Female sexuality is influenced by many physiological and psychological factors (1). Pregnancy is a process that affects sexual activity due to anatomical, physiological, and psychological changes, as well as cultural, social, religious, and emotional influences (1,2).

Musculoskeletal adaptations and hormonal changes during pregnancy affect sexuality (3). Moreover, the preparation for parenthood and thoughts about the baby's future affect women psychologically, leading to a decrease in sexual function. Common sexual dysfunctions during pregnancy include decreased coital frequency and sexual desire, and dyspareunia (4). Dyspareunia refers to pain experienced during sexual intercourse (5).

Sexual function during pregnancy also varies between trimesters (6). There are numerous studies in the literature demonstrating that sexual function is adversely affected during different trimesters of pregnancy (7,8,9). The first trimester is known as the period when a woman adjusts to pregnancy. The production of chorionic gonadotropin (HCG) hormone increases during the first trimester, leading to an increase in breast size and some psychological effects (10). Additionally, HCG affects the phases of sexual function, affecting sexual activity (10). The second trimester is the period when the pregnant woman is most physically and psychologically in harmony with the fetus (11). The balance of hormonal activity and the completion of physical and psychological adaptation during this period positively influence sexual function (11). The third trimester is characterized by significant sexual dysfunction due to the increase in abdominal volume and concern about impending

childbirth (2,12). Physical adaptations during this period, such as fatigue, back pain, dyspnea, and decreased mobility, make sexual intercourse more challenging (13). Therefore, the third trimester is the period with the lowest frequency of sexual intercourse (14). A meta-analysis of studies conducted between 1950 and 1996 showed that sexual satisfaction was 76-79% before pregnancy, 59% in the first trimester, 75-84% in the second trimester, and 40-41% in the third trimester (15). In another study, the presence of dyspareunia during pregnancy was evaluated. Assessments conducted in two different trimesters showed a dyspareunia rate of 30.5% in the second trimester and 41.4% in the third trimester (16). Sexual dysfunction during pregnancy can have a negative impact on marital psychology and can be a barrier to the couple's parenting experience (17,18). Identifying sexual responses during pregnancy is important for maintaining a healthier sexual life during the parenting process.

The aim of our study is to investigate dyspareunia and sexual function in third trimester pregnant women living in Turkey and to contribute to the literature.

METHODS

This study was conducted at the Istanbul Training and Research Hospital's Pregnancy Clinic between January 2024 and August 2024. Approval was obtained from the Istanbul Training and Research Hospital's Clinical Research Ethics Committee (GO:356). The sample of this cross-sectional study consisted of voluntary women in the third-trimester who applied to the clinic. A total of 40 voluntary pregnant women were included in the study. The study was conducted through the application of face-to-face scales and forms. Informed consent was obtained from the pregnant women participating in the study in accordance with the Declaration of Helsinki. The inclusion criteria for the study were as follows: having applied to the Obstetrics and Gynecology Clinic of Istanbul Education and Research Hospital, being in the third trimester (after 28 weeks of pregnancy), being literate, volunteering for participate in the study, being sexually active, and having a BMI <35.

The exclusion criteria included the presence of an active vaginal infection, a history of active malignancy with ongoing radiotherapy and/or chemotherapy, having received hormone replacement therapy within the past year, the use of topicalestrogen, coitus within the past two days, stage 2 or higher pelvic organ prolapse, a history of mesh surgery, and the presence of diseases or medication that cause vaginal dryness (e.g., Sjögren's syndrome, Lichen planus, Lichen sclerosis, or the use of antidepressants or antihistamines).

Evaluations

The study used a demographic form to collect information about the demographic characteristics and obstetric history of the pregnant women, the Visual Analog Scale (VAS) to measure the presence and severity of dyspareunia, and the Female Sexual Function Index (FSFI) to assess female sexual dysfunction.

Demographic Information Form

First, the pregnant women's age, body mass index, education level, and employment status were recorded. Then, their medical and obstetric history was taken, including the presence of chronic diseases, previous surgeries, parity, type and number of births.

Visual Analog Scale (VAS)

The Visual Analog Scale (VAS) is a horizontal line, 0–10 cm (or 0–100 mm) in length, with one end representing no pain and the other end representing the most severe pain (19). The VAS is advantageous because of its simplicity and ease of use, and has been shown in studies to be a reliable and valid tool for assessing the severity of dyspareunia (19). In our study, the VAS was used to measure subjectively perceived pain. Participants were asked to mark the intensity of pain they experienced during sexual intercourse. The marked position on the line was measured with a ruler and recorded in centimeters.

Female Sexual Function Index (FSFI)

The FSFI is a Likert-type scale consisting of 19 items with six subscales that assesses sexual dysfunction in women (20). The FSFI was developed by Rosen et al. in 2000, and its validity and reliability have been established (20). A validated Turkish version of the scale is available (21). The six

subscales of the FSFI are desire, arousal, lubrication, orgasm, satisfaction, and pain. The total score is calculated by multiplying the scores of each subscale by specific factors and then summing. The total score ranges from 2 to 36, with higher scores indicating better function (20).

Statistical Analysis

The data were collected face-to-face during the clinical visits. The collected data were analyzed using the Statistical Package for Social Sciences (SPSS) for Windows 23.0 software. Each parameter was categorized as qualitative or quantitative, and the mean, standard deviation, frequency, and percentages were calculated. Normality distribution was analyzed using the Kolmogorov-Smirnov test. Parametric and non-parametric tests were used. The correlation between VAS dyspareunia and FSFI scores was determined using the Spearman test. The degree of the relationship according to the Spearman correlation coefficients was interpreted as: no relationship (0-0.19), weak (0.20-0.39), moderate (0.40-0.69), strong (0.70-0.89), and very strong (0.90-1) (22). A p-value of <0.005 was considered statistically significant.

RESULTS

A total of 40 pregnant women were included in the study. The mean age of the participants was 30.70 ± 6.48 years and the mean gestational age was 34.05 ± 2.75 weeks. The demographic characteristics of the pregnant women are shown in Table 1.

A FSFI score below 26.55 is considered to be consistent with sexual dysfunction (20). In our study, the majority of the women, based on FSFI scoring, who participated (n=37, 92.50%) were found to have sexual dysfunction.

A weak, statistically significant negative correlation was found between the participants' VAS dyspareunia score and FSFI total and subscale scores (p=0.134, p=0.091) (Table 2).

DISCUSSION

Our study was conducted to evaluate the sexual function and the presence of dyspareunia in third trimester pregnant women living in Turkey. The results showed that sexual dysfunction is common among pregnant women in the third trimester. A weak negative correlation was found between dyspareunia and sexual function.

Table 1. Demographic Characteristics of the Pregnant Women

Participants Demographics (n=40)	
-Age, (IQR)	30.70 (18-44)
-BMI, (IQR)	27.39 (21-35)
Employment Status, % (n)	
-Employed	17 (7)
-Unemployed	83 (33)
-Retired	0
Educational Status, % (n)	
-Illiterate	0
-Literate	7.30 (3)
-Primary School Graduate	26.80 (11)
-High School Graduate	41.50 (17)
-University Graduate	24.40 (10)
-Master's Degree	0
Marital Status, % (n)	
-Single	0
-Married	100 (40)
-With Partner	0
-Parity, (IQR)	1.90 (1-4)
Type of Delivery, (%)	
-Nulliparous	34.10 (14)
-Vaginal Delivery	22 (9)
-Cesarean Section	31.70 (13)
Delivery Related History	
Number of Vaginal Deliveries, (IQR)	0.30 (0-3)
Number of Cesarean Sections, (IQR)	0.50 (0-3)
History of Gynecological Surgery, % (n)	0
History of Chronic Disease, % (n)	4.90 (2)
Frequency of Sexual Intercourse (monthly), (IQR)	3.80 (0-12)
Evaluations	
VAS Dyspareunia, (IQR)	1.10 (0-8)
FSFI (IQR)	
-Score	11.75 (2-36)
-Desire	2.22 (1.2-6)
-Arousal	1.86 (0-6)
-Lubrication	1.86 (0-6)
-Orgasm	1.86 (0-6)
-Satisfaction	2.10 (0-6)
-Pain	1.86 (0-6)

IQR: Interquartile range, **Min-Max** values, **FSFI**: Female Sexual Function Index, **VAS**: Visual Analog Scale, **BMI**: Body Mass Index.

Pregnancy is a period characterized by many physical adaptations (2). Pregnant women may avoid sexual activity because of the changes they experience (23,24,25). The most commonly used scale in literature to assess sexual function is the FSFI (20). In our study, the FSFI was used to assess sexual function in pregnant women. Several studies published in recent years have shown a decline in sexual function in pregnant women (7,8,26).

Table 2. VAS Dyspareunia and FSFI Total and Sucscales Scores of Pregnant Women

	VAS Dyspareunia (rho)	*p*
FSFI total score	-0.241	0.134
FSFI Desire	-0.270	0.091
FSFI Arousal	-0.241	0.134
FSFI Lubrication	-0.241	0.134
FSFI Orgasm	-0.241	0.134
FSFI Satisfaction	-0.241	0.134
FSFI Pain	0.241	0.134

FSFI: Female Sexual Function Index, **VAS**: Visual Analog Scale. *p<0.005. **rho:** Spearman correlation coefficient.

The prevalence of sexual dysfunction in pregnant women varies between studies conducted in different countries (2,7,8,10). Studies investigating sexual dysfunction in the third trimester of pregnancy have reported rates ranging from 62% to 87.7% (2,7,8,10). In our study, the prevalence of sexual dysfunction in third trimester pregnant women living in Turkey was found to be 92.5%. The high rate observed in our study may be due to the belief among pregnant women that coitus during pregnancy could harm the baby or pose a risk of preterm delivery. Additionally, genitourinary infections, dyspareunia, and psychological effects are also thought to have a negative impact on sexual function.

Factors such as weight gain, abdominal circumference, and uterine enlargement as pregnancy progresses, limitations in appropriate sexual positions, and concerns that sexual intercourse may harm the growing fetus are associated with a decline in sexual function (27,28,29). Research supports our study findings.

Several studies have shown that the frequency of sexual intercourse and sexual satisfaction decrease during different trimesters of pregnancy (13,30). Sexual desire and coitus are positively correlated parameters. The literature suggests that coitus decreases significantly during pregnancy. In our study, sexual desire was assessed using the FSFI sexual desire subscale score. The mean FSFI sexual desire subscale score was found to be 2.22, which is consistent with the literature.

Studies evaluating coitus during pregnancy have reported that the monthly frequency of coitus was 6.4 in the study by Naim et al. and 6.6 in the study by Oruc et al. (31,32). In our study, the monthly frequency of coitus in the third trimester was found to be 3.8.

One study examining coitus frequency across trimesters found that 5.1% of women in the first trimester, 13.4% in the second trimester, and 58.6% in the third trimester did not engage in coitus at all (33). Another study focusing on coitus frequency in the third trimester reported that 9.7% of the women experienced no change in sexual activity, 22.6% reported a decrease, and 64.5% did not engage in sexual intercourse (34).

Dyspareunia during pregnancy is a parameter that negatively affects both coitus and sexual function. The causes of dyspareunia during pregnancy include infection, difficulty with arousal, vaginal dryness, genital swelling and bleeding in the genital area, fatigue, fear of miscarriage, and fear of harming the baby (35,36).

According to the literature, as pregnancy progresses, women experience orgasmic dysfunction, difficulty in achieving and maintaining vaginal lubrication, more frequent and intense dyspareunia, and especially fear of sexual intercourse in the third trimester (37). Studies of pregnant women in Turkey have shown that the rate of dyspareunia during pregnancy ranges from 22% to 61% (32,38).

On the other hand, some studies have suggested that dyspareunia decreases as the frequency of coitus decreases with advancing pregnancy (39). In our study, 37.5% of the pregnant women reported experiencing dyspareunia. The dyspareunia rate shows a weak correlation with FSFI scores, which is consistent with the literature. In addition, a weak positive correlation was observed between the FSFI Pain subscale and VAS dyspareunia.

Furthermore, considering that parity may affect sexual function during pregnancy, the effect of the number of parities on sexual function and dyspareunia was evaluated. The results showed that parity had no effect on sexual function or pain.

The strength of our study lies in its focus on the sexual function of pregnant women in the last trimester and its contribution to the literature on pregnant women living in

Turkey. Based on these basic findings, educational and therapeutic approaches to improve the sexual function of pregnant women in Turkey should be supported.

Limitations

The study has several limitations. First, the sample size was relatively small, which limits the generalizability of the findings. Second, the study relied on self-reported data, which may be subject to bias. Future studies with larger sample sizes and objective measures of sexual function are needed for further validate. Additionally, biological and psychological diseases/conditions that affect sexual function were not part of the exclusion criteria in our study. We recommend that future studies consider these factors that may influence sexual function.

CONCLUSION

Physiological and psychological changes occurring during pregnancy affect sexuality. Sexual function during pregnancy varies from trimester to trimester. The third trimester of pregnancy is the time when physiological changes are most intense. Therefore, sexual dysfunction is more pronounced in pregnant women during the third trimester. At the same time, the frequency of sexual intercourse decreases. Sexual dysfunction in pregnant women negatively affects the couple's relationship and the process of parenthood. To maintain healthy sexual function, health professionals, especially physiotherapists specializing in women's health, should provide sexual education and counseling to pregnant women.

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